

Report recommending the trial installation of a  
product shop to test the product type of organization.  
c. 1940.

Mrs. Moore

For your file if you want it.  
It is a copy of the report  
recommending the product  
Shop. hfd

*Confidential*

PREFACE

After some preliminary consideration of its assignment the Committee prepared the following plan for making the study.

- (1) Develop the advantages and disadvantages of the proposed type of organization as compared with the present form
- (2) Develop a Hawthorne organization on a product basis in general terms
  - (a) Organization chart
  - (b) Allocate functions
- (3) Develop in detail one typical shop
  - (a) Organization
  - (b) Functions
  - (c) Routines
  - (d) Occupancy Layouts
- (4) Prepare a complete economic study of the typical shop, the results of this study to serve as the basis for a final recommendation by the Committee

It became evident early in the study that it would be very difficult to reach agreements on the various points, the differences being principally a matter of degree. It also became quite evident that the figures required in an economic study would be compromises and would be based upon the personal opinions of the members of the Committee.

Possibly this situation should have been anticipated because very little experience with a product type of organization is available and therefore the Committee had no factual data to use.

The Committee concluded therefore that the value of any economic study which it could make at this time would be very questionable and at the best would require a rather long period of time to complete.

This conclusion led to the consideration of a trial installation. Study of this possibility soon indicated that this could be easily done due to the present low level of business and could also be done without incurring any substantial expense which would not otherwise be incurred or which would not have some value to the job as at present organized.

The Committee is therefore submitting at this time a recommendation that a trial of the Product Type of Organization be made at Hawthorne. The results of such a trial can then be used as a basis for preparing a final report covering the future possibilities of this type of organization at Hawthorne.

ADVANTAGES OF WORKS FUNCTIONAL ORGANIZATION  
(Centralization of Functions)

1. Specialized performance of each function by experts at a minimum cost for the work done.
  2. Promotes efficiency of each operation when considered individually.
  3. Encourages specialization and development of the art to a high degree, with knowledge and application of the best practices.
  - \*4. Permits more pooling of help on like work and avoidance of scattered fractional people. Flexibility within a specific occupation and grade is increased, and staggered peak loads can be handled efficiently.
  5. Help is easier to get because the field is broader; it is easier to train them for the more specialized jobs; and cheaper grades of help can be used.
  6. Higher grade experts can be supported by the massing of like work. The more skilled specialists can be retained through a depression because protected by a thicker layer of less highly trained people.
  7. It is possible to operate with a more limited class of supervisory talent.
  - \*8. Overhead is clearly labeled and segregated and subject to overall control.
  - \*9. It is easier to maintain uniformity and correlation with necessary outside agencies and to maintain standardized practices.
- \*Can be retained by a functional organization with a product location physically.

- \*10. Management burden is decreased by permitting each organization to serve as a check on the others.
- \*11. Decreases the number of people necessary to consult whenever the question falls within one of the centralized functions.
- \*12. Permits greater concentration by an organization upon one function to the exclusion of worries about other problems.
- 13. Success depends more upon the system in use than on individual ability or knowledge.
- 14. Takes advantage of the fact that a group will be wrong less often than an individual administrator, and depends more on the average than on exceptional ability.
- \*15. Reduces the likelihood of a weak supervisor doing much damage.
- 16. Furnishes a larger unit of group solidarity to which each member owes allegiance, giving him a greater feeling of security. His position in the scheme of things is more definite and easily recognized.
- \*17. Presents a better opportunity to the average person. By becoming a specialist or acquiring higher skill he can advance higher without becoming an all around manager.
- 18. Appeals more to the average supervisor. It makes more "good" jobs; permits a man of limited ability to climb higher in some specific line; limits and subdivides responsibility; permits building a smooth running routine which requires little attention; and makes his position easy to defend and hard to attack.

\*Can be retained by a functional organization with a product location physically.

DISADVANTAGES OF A WORKS FUNCTIONAL ORGANIZATION  
WHEN AS LARGE AS HAWTHORNE

1. The cost of coordinating the various functions becomes serious.

This is the largest single item of non-productive cost.

2. Tends to place emphasis on the means (the function) rather than on the end (profitable operation of the business as a whole).

3. Makes it too easy to prove in high non-productive costs. There is a tendency to build up organizations adequate to cover any contingency, which may not always be profitable.

- \*4. The traveling of product and paper through many organizations increases the interval of operation and increases investment.

5. Most items are simple and could readily be handled by one man but must clear through a number of functional steps at a loss of time and money. There is a tendency to set up routines to cover the most complicated situations and then to send everything through this routine whether needed or not.

- \*6. Presence of so many functional steps complicates the paper work both as to copies and content. The cost of locating missing copies is also high.

7. There is present an incentive for the minor functional supervisors to make their jobs look important as this will add security and prestige. This incentive is directly contrary to the overall management aim.

8. Encourages an abstract or academic attitude rather than a managerial attitude.

\*Can be largely avoided by physically locating functional units on a product basis.

9. The ingenuity and interest of the individual is restricted to the line of craft efficiency and pride rather than to considerations of the product produced. This is probably one of the most costly intangible disadvantages.
10. Reduces the likelihood of any exceptional supervisor doing an outstandingly good job. He is discouraged by red tape at every turn out of the routine path.
11. It is too hard to get action when needed. Many people with diverse opinions and attitudes must be consulted. It is difficult to get a complete story promptly. Much time is spent in conference which sometimes get nowhere.
12. Too many questions have to be taken up so high in the organization to reach a common supervisor that they reach a man too busy to give adequate attention to them.
13. The supervisor charged with responsibility for any phase of costs seldom has enough authority or control of enough functions to really exercise effective control.
14. It is too easy to avoid serious direct responsibility in the maze of interlocking functions and routines.
15. Too much money can be spent by each functional organization in safeguarding itself against possible criticism in case of trouble on items of joint responsibility. This produces tons of records and much special routine which contributes nothing to the product, but makes sure that if something goes wrong the blame will not be misplaced; also results in fences being built which slow up action and progress.



16. When a functional unit gets large it tends to fatten at the expense of the Company as a whole or some other weaker units. This must be watched carefully when one organization goes on a campaign of efficiency which often merely shifts costs elsewhere. It also becomes too difficult for the management to know enough details to decide whether all of the expense is justified or not.
17. Establishes as a unit of group loyalty, a function rather than a product.
18. Makes it too difficult to train all around managers, since there are relatively few such jobs. The rising executives get many years of functional training at their most impressionable age. It tends to unfit rather than fit men for the most important posts in the Company.
19. The training given under this system tends in some respects to be narrowing and reduces the perspective of the individual, both worker and supervisor.
20. Tends to discourage the aggressive individual in that he finds it too difficult to accomplish anything, is wasteful of his energy, offers limited fields to operate in, narrows his outlook and experience. The result is that many such men leave the Company or else become seared, or lose their punch.
21. Any improvements which change functional boundaries are discouraged and hard to sell.
22. Functionalization is never perfect and the various functions both overlap and leave gaps, causing confusion and loss of time.
23. Encourages uniformity for uniformity's sake as it is much easier to administer a uniform setup.

24. The interlinking of functions forces all functional organizations to follow suit when one puts on additional help, starting an endless upward spiral which is terminated only by a downturn in business.

ADVANTAGES OF PRODUCT SHOP GROUPING  
OF FUNCTIONAL ASSIGNMENTS

1. Much of the high cost of coordination of functions is eliminated.
2. It subordinates the means to the end and gives a better perspective.

The cost of the product becomes more conspicuous than the cost of any function.

- \*3. The interval and amount of travel is reduced for both product and paper work.

- ##4. Shop investment is reduced to a fraction of its present amount. The ratio of investment in process to raw material investment is reduced, making for fewer losses and greater flexibility, as well as lower total investment. This has been proved by trial.

- ##5. Merchandise investment can be very much reduced due to the shorter interval of manufacture and greater load flexibility. This has been demonstrated at Point Breeze.

- ##6. The tracing cost is reduced greatly, by the reduction of travel through different departments and by the more systematic output planning made possible by a product layout.

- \*7. The amount of records required is reduced both in kinds and number of copies. The paper work can be simplified to a great extent. This reduces the amount of clerical work to be performed and simplifies what is retained.

- ##8. The inspection cost can be reduced, due to ability of the operating unit to coordinate quality and output more intelligently and effectively. Less process inspection is necessary, particularly if the producing gang is paid only for completed product.

\*Can also be obtained by retaining functional organizations but locating on a product basis.

- ## Partially due to concentration of manufacturing operations on a product basis.

- #9. The cost of planning is reduced because of the segregation of all that concerns one product in one place.
- #10. Group payment for a completed product can be utilized with its double advantage of placing the incentive of all concerned upon completed good product and not upon parts which may or may not be used profitably and of a payment plan which is cheaper to administer with less clerical effort.
- #11. The maintenance of equipment can be made more effective if associated with the product. The amount of idle time of equipment down for repairs is claimed to be much less than with functional setup. It is also possible to place the minor maintenance on an incentive basis depending in part on the earnings of the productive operators.
- #12. The capacity of a unit is more clearly known in terms of completed product, changes in capacity can be handled more easily, and the capacity study job becomes very simple.
- #13. Design changes are facilitated because of the lower process stocks, the shorter interval from raw material to finished product, and the greater ease with which the job is observed and controlled.
- #14. Manufacturing difficulties other than fundamental development troubles can be cleared much easier due to close association of component operations.
- #15. Close association of operations and product as a whole will uncover many possibilities of cost reduction, stimulate the elimination of unnecessary operations, and develop short cuts. The details of a product and its manufacture will show up in a true light.

\* Results primarily from making parts and completed product in one location.

16. Responsibility and authority will be concentrated in fewer hands and closer to the product. This will make it easier to exercise effective control and will place the aim of lower levels of supervision in closer sympathy with overall business management.
17. The head of the operating unit has a freer hand to accomplish overall results. The output, service, cost, quality, and investment will speak for themselves and are affected by fewer outside agencies.
- #18. Raw material control can be improved, being directly associated with finished product instead of with parts (sometimes with several generations).
19. The overhead can be forced down more effectively because not supported by so complicated an organization and routine structure.
20. Competition between product units on overall efficiency can be stimulated more effectively and safely.
21. Conditions are favorable to get the most out of able supervisors.
22. Higher supervisors are closer to the product.
23. Gives rising executives an all around managerial training and perspective at a lower level and while they are younger. It gives this training to a greater number, providing a broader field from which to pick candidates for higher levels which always demand this type of men. This should yield a better type of supervisor in general.
24. Better opportunities are offered for the advancement of the versatile type of men who make good overall managers.

# Results primarily from making parts and completed product in one location.

25. The aggressive and intelligent individual (supervisor) is better satisfied because the way is open for performance to the limit of his ability less hampered by red tape; his energy is used in action rather than persuasion; the results are evidence of work done; the experience is broadening; the field wide; and it pays better if he is successful.
26. Less time and energy need be used in cooperative committees and conferences.
- \*\*27. More people are grouped about a particular product, establishing their loyalty to that tangible product and utilizing their craftsmanship spirit in its favor. Pride in output becomes more tangible because it is associated with a completed and recognizable product.
28. Skill is developed along the lines of flexibility of the individual resulting in fewer problems when a particular job changes or disappears.
29. Flexibility of the group or department is obtained by shifting between trades rather than within a trade. This may not be quite so economical but develops more versatile workers.

\*\* Partially due to concentration of manufacturing operations on a product basis.

DISADVANTAGES OF A PRODUCT TYPE GROUPING  
OF FUNCTIONAL ASSIGNMENTS

- \*1. May result in delegating too far down the line a function by which management must control its subordinates.
- \*\*2. Increases cost of comparable work operations (office) by sub-dividing into too small units with fractional people frequently, and by preventing utilization of mass non-productive activities.
- 3. Cannot always support help of proper grade (both experts and low grade) for maximum efficiency of the necessary operations.
- 4. Duplicates equipment in some cases.
- 5. Duplicates talent in many cases.
- 6. Interferes with swinging a large group onto a peak operating load.
- \*\*7. Reduces flexibility of non-productive operations.
- \*8. Management must do a more thorough job of checking and controlling in the absence of interchecking of each function by other functions.
- \*\*9. Depends on the men in the key positions rather than on the system.  
The organization will not run itself and will not stay put without constant attention.
- \*10. Loads up the supervisor with more functions and takes more constant and thorough attention.
- \*11. Results are limited by the ability of the supervisors. Too much depends upon the ability and integrity of each supervisor.
- \*12. Mistakes in selecting supervisors are more serious.
- \*13. Mistakes of supervisors are likely to be more serious and cost more.
- \*14. The wider field of control by supervisors will permit more effective covering up of errors.
- \* Will be eliminated by retaining functional organization but locating in a product grouping.
- \*\* Can be partially avoided by functional organization and product grouping.

15. Overhead can be disguised as productive labor and hidden as such.
16. Questions of a general nature are more difficult to solve; more people must be consulted, and there will be less agreement.
17. Outside organizations and local coordinating agencies must contact more people.
18. May not insure uniform practices and policies unless directed by the management or controlled by a staff coordinator. This directly affects such things as cost policies, and inspection standards.
19. Action taken may not be the result of the best thought of several experts.
20. Utilization of experience and developments from similar fields is less certain except where the general management is interested.
21. Depends on overall results rather than specialization. Does not enable the management to bolster up weak supervisors by the strength of his associates or protective routines.
22. Absence of centralized specialization may retard progress in details unless stimulated by the management.
23. Requires more capable, versatile, and aggressive supervisors, who are scarcer, and reduces the extent to which men of limited or specialized abilities can be utilized.
24. Not attractive to many supervisors because it requires constant attention, frequent final decisions, and all around ability rather than specialized skill or knowledge; reduces the number of important jobs and increases the chances of failure.
25. The groups of people are heterogeneous and there is a lack of definite trades by which the individual can be known. The security of the individual is not so visible.



26. The employment situation is more acute, due to the needs for additional help being more definite and immediate with smaller groups.
27. The employment job is more difficult because the classification of occupations is less definite. A more efficient system of skill measurement is needed for the more versatile help required. It is harder to identify people of the proper degree of flexibility as contrasted with skill within a certain trade.

ADVANTAGES AND DISADVANTAGES  
OF FUNCTIONAL AND PRODUCT TYPE ORGANIZATION

It is understood that the Product Type Organization is also partly functionalized but in smaller units, and many of the relative advantages or disadvantages are a matter of degree of effectiveness rather than fundamental differences, due to functionalizing in larger or smaller units and at a higher or lower level in the organization.

There are two distinct kinds of work involved, operating functions and non-operating or so-called non-productive functions. Somewhat different conditions hold for the two classes, though in many ways they are affected alike. Decentralization of the two need not necessarily be interdependent. Some experience has been had with decentralizing the operating functions on a product basis and the effects can be pretty clearly evaluated. The answer is not so easy on the non-operating functions.

All of the theoretical or alleged advantages and disadvantages of the two plans are submitted for reference regardless of whether or not they were supported by a majority opinion, since all of them were touched upon in the discussions by the committee. The committee does not attempt to evaluate them and feels that all that can be done at this time is to say that it appears as if there is a chance of realizing considerable profit by a change, which should be proved or disproved by a trial.

In addition to the advantages and disadvantages of the two types of organization there are certain advantages and disadvantages of making a radical change in the organization regardless of the direction of the change.

Advantages of a Change as Such

1. Any change, whether intrinsically an improvement or not, after many years of continuity will get minds out of their accustomed channels and result in many improvements not discernible as long as the old order is retained.
2. Will break up a long period of specialization upon functions as such (along which most of the possible advancement of the art has perhaps already been made) and start a period of specialization upon the product as such, and the art of management at the same time.
3. Will automatically wash out many practices and expenditures which have become established and accepted but which add no commensurate value to the product.
4. Will result in appraisal from a different viewpoint of both practices and personnel.
5. Will break down for a time the resistance to change which is inevitably built up when one system or organization (or society or government) has existed for a long period and will clear the way for replacement of outmoded practices which have become deeply intrenched.
6. Will bring to the surface conscious attention to a multitude of items which have been taken for granted for a long time.

7. Will upset established protective devices, schemes, and practices of individuals and groups (such a limitation of output and non-essential records) and release possibilities of improvement merely by the stimulation and diversion of a change.
8. New opportunities will be opened for the supervisors and new effort stimulated.

DISADVANTAGES OF A CHANGE AS SUCH

1. Engineering and physical moving cost.
2. The entire piece work and earnings system will be thrown out of balance.  
People will be moved with their job from one earnings level to another and people from different earnings levels mixed in a new grouping.
3. The supervisory staff will have to be rearranged and largely retrained.
4. The individual workers will have to be retrained to some extent.
5. Some valuable people, both individual and supervisory, will be hard to fit into the new scheme.
6. The associations of the individuals (workers and supervisors) will be upset and readjustments must be made, which will be difficult in some cases. Unless steps are taken to assist this readjustment, the change will be certain to result in a new crop of problem cases.
7. Considerable confusion will occur and some fumbling, with occasional losses and embarrassment.
8. Unless precautions are taken, there will be loss of continuity in some essential functions. A serious drift of standards and policies may occur.
9. Those whose jobs are now well organized will find much hard work necessary to reorganize and rearrange their work.
10. Desirable developments and practices of the old system may be discarded as well as the undesirable, through failure to recognize the underlying reasons.